

AUG 16 2007

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REMARKS

Applicants appreciate the Office's review of the present application. In response to the Office Action, the cited references have been reviewed, and the rejections and objections made to the claims by the Examiner have been considered. In order to render the claims more clear and definite, and to emphasize the patentable novelty thereof, claims 2-5, 14, 17, 20, 22, 25, 34, and 37 have been amended, claims 18-19, 27, and 32 have been cancelled without prejudice, and new claims 39-45 have been added. Support for any claim amendments and new claims is found in the specification, claims, and drawings as originally filed, and no new matter has been added. Accordingly, all claims presently on file in the subject application are in condition for immediate allowance, and such action is respectfully requested.

Rejections**Rejection Under 35 USC §112 First Paragraph**

Claims 5-15, 20-24, 31, and 33-38 have been rejected under 35 USC §112, paragraph 1, as failing to comply with the written description requirement.

In response, claims 5 and 20 have been amended to recite an overlapping angular position rather than the same angular position, which is consistent with the suggestion provided by the Office.

In view of the foregoing, and since claims 6-15, 21-24, 31, and 33-38 were rejected under 35 USC §112, paragraph 1, only as dependent on one of claims 5 and 20, it is submitted that the rejections under 35 USC §112, paragraph 1, have been overcome and should be withdrawn.

Rejection Under 35 USC §112 Second Paragraph

Claims 5-15, 20-24, 31, and 33-38 have been rejected under 35 USC §112, paragraph 2, as being indefinite for failing to particularly point and distinctly claim the subject matter which

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the Applicant regards as the invention.

In response, independent claims 5 and 20 have been amended to recite an overlapping angular position rather than the same angular position, which is consistent with the suggestion provided by the Office.

In view of the foregoing, it is submitted that the rejections under 35 USC §112, paragraph 2, of independent claims 5 and 20, and their dependent claims 6-15, 21-24, 31, and 33-38, have been overcome and should be withdrawn.

Office Action is Incomplete

In the Office Action Summary, claim 31 is indicated as rejected. In the Detailed Action, claim 31 is rejected only under 35 USC §112, paragraph 1, as failing to comply with the written description requirement. MPEP 2163 requires that:

“where Office personnel establish a prima facie case of lack of written description for a claim, a thorough review of the prior art and examination on the merits for compliance with the other statutory requirements, including those of 35 U.S.C. 101, 102, 103, and 112, is to be conducted prior to completing an Office action which includes a rejection for lack of written description”.

However, no basis or rationale for any prior art-based rejection of claim 31 is included in the Detailed Action. Since the basis and rationale for an art-based rejection of claim 31 is not specified, Applicants have no opportunity to respond to the rejection. It is noted that art-based rejections have been provided for dependent claims 21-24, which were similarly rejected under 35 USC §112, paragraph 1, and which also depend from claim 20.

In the absence of conditions such as misjoinder or fundamental defects in the application (conditions which do not exist here), 37 C.F.R. §1.104(b) requires that the “examiner’s action will be complete as to all matters”. Because no basis for an art-based rejection of claim 31 has been provided, Applicants believe that the rejection is deficient on its face, and therefore that the Office Action is incomplete. Accordingly, Applicants respectfully request clarification of the rejections with respect to the statutory basis, specific references, and specific references

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teachings therein pursuant to 37 CFR §1.104(c)(2) in a subsequent non-final Office Action if any of the claims are not found to be allowable.

Rejection Under 35USC §103

Claims 2, 4-6, 8, 10, 20, 23-25, and 34-38 have been rejected under 35 USC §103(a), as being unpatentable over U.S. patent application publication 2002/0191517 by Honda et al. ("Honda") in view of U.S. patent 6,145,368 to Klein ("Klein"). Applicants respectfully traverse the rejection and request reconsideration.

As to a rejection under §103(a), the U.S. Patent and Trademark Office ("USPTO") has the burden under §103 to establish a *prima facie* case of obviousness by showing some objective teaching in the prior art or generally available knowledge of one of ordinary skill in the art that would lead that individual to the claimed invention. See In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Manual of Patent Examining Procedure (MPEP) section 2143 discusses the requirements of a *prima facie* case for obviousness. That section provides as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

The rejection of independent claim 20, and its dependent claims 23-24, is respectfully traversed at least because the Office has not established a *prima facie* case of obviousness in that there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. In Re

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Kahn, 441 F.3d, 977, 988 (CA Fed. 2006). A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. The Office states that the Honda and Klein references can be combined together "to measure the disk speed and angular orientation directly from the disk, improving accuracy" (Office Action, p.7). Applicant believes that this reason is merely a conclusory statement of generalized advantages and convenient assumptions that lacks the rational underpinning required for validly combining the references. The Honda reference, as pointed out by the Office (Office Action, p.6), discloses tracking the disk speed and the angular orientation (para. [0037]). In the Honda reference, a frequency generator 58 generates pulse signals based on rotation of the spindle motor 56, and a servo circuit 64 uses those signals to control speed and orientation of the disk. There is no teaching or suggestion in the Honda reference that this technique is lacking in accuracy. In addition, there is no teaching or suggestion in the Klein reference that provides a basis to conclude that the technique disclosed by the Klein reference would provide improved accuracy relative to what is achieved by the system of the Honda reference. Furthermore, the Klein reference is not directed to optical disks at all, much less to laser labeling of an optical disk. Instead, the Klein reference is directed to a rotatable disk of a rotary encoder used in, for example, a mouse or joystick (Abstract; Fig. 3). Thus the Klein reference does not teach or suggest measuring speed and orientation from an optical disk being labeled. Consequently, this rationale impermissibly uses the Applicants' disclosure as a blueprint or in hindsight for the rejection. Because the Office has not provided an articulated reason with some rational underpinning to combine the prior art elements in the manner claimed, Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for that reason and should be withdrawn.

The rejection of independent claim 5, and its dependent claims 2, 4, 6, 8, 10, and 34-38 is

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respectfully traversed for at least the following reasons. Claim 5 recites:

“5. (Currently amended) An optical disk, comprising:
a label region on the optical disk comprising a writeable material;
substantially identical disk speed features, disposed on the disk in a first annular ring at a first radial position and located to be readable when writing the label region, to convey disk speed data; and
disk angular orientation features different from the disk speed features, disposed on the disk in a second annular ring at a second radial position different from the first radial position and located to be readable when writing to the label region, to convey disk angular orientation data, wherein at least some of the disk angular orientation features and at least some of the disk speed features have an overlapping angular position, and wherein the first annular ring abuts the second annular ring.” (emphasis added)

The Office has not established a *prima facie* case of obviousness at least because the applied references do not teach or suggest all of Applicant's claim limitations.

The limitation where the first annular ring of disk speed features abuts the second annular ring of disk angular orientation features is not taught or suggested by the Honda and Klein references. The Office acknowledges that the Honda reference does not teach these features, but states that the Klein reference does. However, to whatever extent, if any, that the data channel 104 and the index channel 102 may correspond, arguendo, to a first annual ring of disk speed features and a second annular ring of disk angular orientation features, the rings do not abut each other, as recited by the claim. Rather, the marks of data channel 104 and the index channel 102 are spaced apart from each other. On a labelable optical disk, it is advantageous to abut the rings containing the disk speed features and the disk angular orientation features so as to maximize the contiguous area on the disk available for carrying the labeling.

Therefore, for the reasons discussed herein, the applied references do not teach or suggest all of Applicants' claim limitations, and thus the rejection is improper at least for this reason and should be withdrawn.

Furthermore, as explained heretofore with regard to claim 20, the Office has not established a *prima facie* case of obviousness in that there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine

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the prior art elements in the manner claimed.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in light of Applicants' teachings. Therefore, the rejection is improper at least for that reason and should be withdrawn.

Independent claim 25 (currently amended) recites limitations similar to those of claim 5, discussed above.

Claim 25 recites:

"25. (Currently amended) An optical disk, comprising:
a label region on the optical disk comprising a writeable material;
disk speed features disposed in a first annular ring, located to be readable when writing the label region, to convey disk speed data; and
disk angular orientation features different from the disk speed features and disposed in a second annular ring abutting the first annular ring, located to be readable when writing to the label side, to convey disk angular orientation data, wherein at least some of the disk angular orientation features are of different sizes." (emphasis added)

For similar reasons as explained heretofore with regard to claim 5, the features of the present invention are not taught or suggested by the cited references in that the features of a second annular ring of disk angular orientation features abutting a first annular ring of disk speed features are neither taught nor suggested by the Honda reference in combination with the Klein reference. Furthermore, for similar reasons as explained heretofore with regard to claim 20, the Office has not established a *prima facie* case of obviousness in that there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed.

Applicants respectfully traverse the Office's assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants' invention. Such could be possible only in hindsight and in

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light of Applicants' teachings. Therefore, the rejection of independent claim 25 is improper at least for that reason and should be withdrawn.

Claims 7, 12, 14-15, 17, 22, and 33 have been rejected under 35 USC §103(a), as being unpatentable over the Honda reference in view of the Klein reference, and further in view of U.S. patent 5,107,107 to Osborne ("Osborne"). Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of these claims on independent claim 5 or 20, whose reasons for allowability over the Honda and Klein references have been discussed heretofore and against which the Osborne reference has not been cited. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

Dependent claim 14 is further patentably distinguishable over the cited references. Claim 14 recites:

"14. (Currently amended) The optical disk of claim 12, wherein the markings comprise interspersed areas with and without substantially circular molded pits." (emphasis added)

The features of claim 14 are not taught or suggested by the cited references. With regard to the molded pits, the Office cites the Osborne reference. However, the pits disclosed in the Osborne reference (i.e. striped pits 58, Fig. 5) are wedge-shaped, not substantially circular. As can be seen in Fig. 5 of the present application, an arrangement of circular molded pits can easily form markings of various sizes and shapes for disk speed features and angular orientation features. Therefore, the rejection is improper and should be withdrawn at least for these additional reasons.

Dependent claim 22 recites similar limitations as claim 14, and thus the rejection of claim 21 is further traversed for similar reasons as have been explained heretofore for claim 14.

Dependent claim 15 is further patentably distinguishable over the cited references. Claim 15 recites:

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"15. (Original) The optical disk of claim 12, wherein molded pits define a light-deflecting feature." (emphasis added)

The features of claim 15 are not taught or suggested by the cited references. With regard to the light-deflecting feature, the Office states that the "molded pits define a light-deflecting feature" in the Osborne reference (Office Action, p.11). However, Applicants believe that this is incorrect. The pits of the Osborne references do not deflect light, but rather operate by a different principle. Coherent light that is reflected from these pits must travel a longer distance to detector 64 than light reflected by areas other than pits (col. 6, lines 18-28). As explained by the Osborne reference:

"When a single stripe 58 or 59 lies within the field of view of the detector 64, all the light striking the detector 64 is in phase. When a transition occurs in which portions of two adjacent stripes 58 and 59 are visible simultaneously, there is a substantial decrease in the intensity of the reflected beam. The reason for this is that the beam consists of two components which have travelled distances differing by a fraction of a wavelength before arriving at the detector 64. Since all the light leaves the source 60 in phase, the two components are out of phase when they strike the detector 64. Constructive interference occurs, and the intensity of the reflected light drops. Thus, the intensity of the light falling on the detector 64 varies as the disk 56 is rotated." (col. 6, lines 29-34)

Accordingly, the Osborne reference does not teach or suggest that molded pits define a light-deflecting feature. Therefore, the rejection is improper and should be withdrawn at least for these additional reasons.

Claim 11 has been rejected under 35 USC §103(a), as being unpatentable over the Honda reference in view of the Klein reference, further in view of the Osborne reference, and further in view of U.S. patent 6,109,324 to Bugner et al. ("Bugner"). Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of this claim on independent claim 5, whose reasons for allowability over the Honda and Klein references have been discussed heretofore and against which the Osborne and Bugner references have not been cited. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

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Claims 2, 13, and 21 have been rejected under 35 USC §103(a), as being unpatentable over the Honda reference in view of the Klein reference, further in view of the Osborne reference, and further in view of U.S. patent 5,670,947 to Nagashima ("Nagashima"). Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of these claims on independent claim 5 or 20, whose reasons for allowability over the Honda and Klein references have been discussed heretofore and against which the Osborne and Nagashima references have not been cited. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

Dependent claim 13 is further patentably distinguishable over the cited references. Claim 13 recites:

"13. (Original) The optical disk of claim 12, wherein the markings comprise a molded saw tooth to deflect light from a sensor." (emphasis added)

The features of claim 13 are not taught or suggested by the cited references.

With regard to markings that deflect light, the Office refers to the rejection of claim 15. Applicants traverse this rejection for similar reasons as explained heretofore for claim 15, in that the pits, and thus the markings, do not deflect light.

With regard to markings that comprise a molded saw tooth to deflect light from a sensor, the Office acknowledges that this is not disclosed by the Honda, Klein, and Osborne references but states that the Nagashima reference discloses this (Office Action, p.13).

The Nagashima reference is not directed to optical disks, nor to rotating disks in a rotary decoder, but rather to a smoke detector. The reference discloses:

"Antireflection faces 23 and 24 each having a sawtooth cross section shape are formed on the lower face of the smoke detecting unit body 5 and on the inner face of the smoke detecting unit cover 11, respectively. If infrared rays from the smoke-detecting infrared LED 21 are incident on the antireflection faces 23 and 24, the antireflection faces 23 and 24 prevent the directly reflected light from being incident on the light receiving device 20. A space surrounded by the antireflection faces 23 and 24, the plurality of labyrinth members 13, the holders 16 and 17, etc. constitutes a smoke detecting chamber 25A. A smoke detecting space 25 is formed at the

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center of the smoke detecting chamber 25A.” (col. 3, lines 29-41)

The antireflection faces 23-24 are not markings of any kind. Rather, they form non-reflective walls of a smoke detecting chamber 25A. There is no disclosure that any portions of the faces 23-24 are reflective, as would be needed for forming a marking pattern. Thus, the applied references do not teach or suggest all of the limitations of claim, and thus the rejection is improper at least for this additional reason.

Furthermore, there is no articulated reason with some rational underpinning that would have prompted a person of ordinary skill in the relevant field to combine the prior art elements in the manner claimed. The Office states that “a molded pit and a molded saw tooth are used in the same environment, for the same purpose, and achieve the same result” (Office Action, p.13). However, Applicants respectfully believe that this is not correct. First, the molded pit of the Osborne reference does not achieve the same purpose as the molded saw tooth of the Nagashima reference. The molded saw tooth will “prevent the directly reflected light from being incident on the light receiving device 20” (Nagashima, col. 3, lines 35-37). However, the molded pit of the Osborne reference, as explained heretofore with regard to claim 15, does not deflect light, but rather makes the light travel a longer distance to the detector (Osborne, col. 6, lines 18-28). Second, the molded pit and the molded saw tooth are not used in the same environment. The molded pit of the Osborne reference is used to form a bilevel disk 56 in a rotary optical encoder 20 (col. 1, line 47 – col. 2, line 28). The molded saw tooth of the Nagashima reference, as explained above, is used to form a wall of a smoke detector chamber. Applicants respectfully traverse the Office’s assertion that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the features recited in the claims of Applicants’ invention. Such could be possible only in hindsight and in light of Applicants’ teachings. Therefore, the rejection is improper at least for that additional reason.

Dependent claim 21 recites similar limitations as claim 13, and thus the rejection of claim 21 is further traversed for similar reasons as have been explained heretofore for claim 13.

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Claims 2, 4, and 17 have been rejected under 35 USC §103(a), as being unpatentable over the Honda reference in view of U.S. patent 4,929,822 to Nakamura et al. ("Nakamura"). Claims 2, 4, and 17 previously depended from independent claim 32, now canceled, which was rejected as unpatentable over the Honda and Nakamura references. Claims 2, 4, and 17 have been amended herein to depend from independent claim 5. Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of this claim on independent claim 5, whose reasons for allowability have been discussed heretofore. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

Claim 3 has been rejected under 35 USC §103(a), as being unpatentable over the Honda reference in view of the Nakamura reference, and further in view of the Nagashima reference. Claim 3 previously depended from independent claim 32, now canceled, which was rejected as unpatentable over the Honda and Nakamura references. Claim 3 has have been amended herein to depend from independent claim 5. Applicants respectfully traverse the rejection and request reconsideration at least based on the dependence of this claim on independent claim 5, whose reasons for allowability have been discussed heretofore. In addition, claim 3 is further allowable for similar reasons as have been explained heretofore for claim 15. Therefore, the rejection is improper at least for these reasons and should be withdrawn.

Conclusion

Attorney for Applicants has reviewed each one of the cited references made of record and not relied upon, and believes that the claims presently on file in the subject application patentably distinguish thereover, either taken alone or in combination with one another.

Therefore, all claims presently on file in the subject application are in condition for immediate allowance, and such action is respectfully requested. If it is felt for any reason that direct communication with Applicant's attorney would serve to advance prosecution of this case

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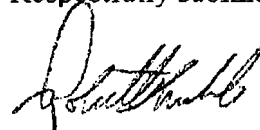
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to finality, the Examiner is invited to call the undersigned Robert C. Sismilich, Esq. at the below-listed telephone number.

**AUTHORIZATION TO PAY AND PETITION
FOR THE ACCEPTANCE OF ANY NECESSARY FEES**

If any charges or fees must be paid in connection with the foregoing communication (including but not limited to the payment of an extension fee or issue fees), or if any overpayment is to be refunded in connection with the above-identified application, any such charges or fees, or any such overpayment, may be respectively paid out of, or into, the Deposit Account No. 08-2025 of Hewlett-Packard Company. If any such payment also requires Petition or Extension Request, please construe this authorization to pay as the necessary Petition or Request which is required to accompany the payment.

Respectfully submitted,



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